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[NOTE. $88\frac{8}{9}$ is obtained by multiplying $66\frac{2}{3}$ by $\frac{4}{3}$.]

Solved with same result as in (1) by *FREDERICK R. HONEY.*

[NOTE. There seems to be some disagreement among our contributors as to the correct solution of this problem. I, however, agree with Mr. Gruber, and have used his method of solution for several years. For a more detailed statement of this method the reader is referred to my *Mathematical Solution Book*. EDITOR.]

65. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pennsylvania.

Bought April 4, 1894, 250 yards of broadcloth at $\$5.37\frac{1}{2}$ per yard, less $12\frac{1}{2}$ and 10% discount for cash payment. Sold September 5, 1894, at 15, 10, and 5% on *quoted price*, the cloth; and in settlement received a 90-day note which I had discounted at $5\frac{1}{2}\%$, October 19, 1894, by the First National Bank of Baltimore, Maryland. Reckoning 6% interest on the *money invested* in the cloth, what is the profit made?

I. Solution by P. S. BERG, Larimore, North Dakota, and G. B. M. ZERR, A. M., Ph. D., Texarkana, Arkansas-Texas.

$1.00-.12\frac{1}{2}=.87\frac{1}{2},\ 1.00-.10=.90.\quad \therefore\ 1.00\times.87\frac{1}{2}\times.90=78\frac{3}{4}\%.$

$\$5.37\frac{1}{2}\times.78\frac{3}{4}\times250=\$1058.203125=\text{cost}.$

From April 4th to September 5th is 5 months, 1 day, at 6%, \$1. amounts to $\$1.025\frac{1}{6}$. $\$1058.203125\times1.025\frac{1}{6}=\$1084.8336.$

$1.00+.15=1.15,\ 1.00+.10=1.10,\ 1.00+.05=105\%.$

$1.15\times1.10\times1.05=132.825\%.$

$\$5.37\frac{1}{2}\times1.32825\times250=\$1784.8359375.$

From October 19th to December 8th, 50 days, at $5\frac{1}{2}\%$, $\$1.=.007\frac{25}{36}$.

$\$1.00-\$.007\frac{25}{36}=\$.992\frac{11}{36}.$

$\$1784.8359375\times.992\frac{11}{36}=\$1771.2017.$

$\$1771.2017-\$1084.8336=\$686.3681$ profit.

PROBLEMS.

69. Proposed by EDGAR H. JOHNSON, Professor of Mathematics, Emory College, Oxford, Georgia.

Every man in a certain group belongs to at least one of these classes: Methodists, Democrats, Farmers. In the group there are 10 Methodists, 12 Democrats, 13 Farmers; 3 men who are Methodists and Democrats, 4 who are Democrats and Farmers, 5 who are Methodists and Farmers. Finally, there are 2 men who are at the same time Methodists, Democrats and Farmers. Required the number of men in the group.

70. Proposed by J. A. CALDERHEAD, M. Sc., Professor of Mathematics in Curry University, Pittsburg, Pennsylvania.

A owes me \$100 due in 2 years, and I owe him \$200 due in 4 years; when can I pay him \$100 to settle the account equitably, money being worth 6%?